EPA Comments on the Maryland
Draft Phase I Watershed Implementation Plan

This document provides the Maryland Department of the Environment (MDE) with the results of the U.S. Environmental Protection Agency's (EPA) evaluation of Maryland's draft Phase I Watershed Implementation Plan (WIP). The document expands upon the meeting between Maryland and EPA staff on September 21, 2010 and the letter and WIP Evaluation Fact Sheet that Regional Administrator Shawn Garvin sent to MDE Secretary Shari Wilson on September 24. This enclosure describes in more detail EPA's key comments and ways in which Maryland can enhance the Phase I WIP. It is anticipated that this enclosure coupled with subsequent meetings and calls among EPA and Maryland staff will provide sufficient detail for Maryland to finalize its WIP, which is due to EPA on November 29, 2010, and the Phase II WIP in 2011. EPA looks forward to meeting with Maryland staff to further this dialogue and appreciates efforts to schedule this meeting as soon as possible. EPA also looks forward to reviewing revised WIP scenario runs starting as early as this week.

Section I. Overview of the Draft Phase I Watershed Implementation Plan (WIP)

We commend Maryland for submitting a very substantive draft Phase I WIP. We recognize and greatly appreciate the tremendous effort that the Maryland Governor's Office, and the Departments of the Environment, Natural Resources, Agriculture, Planning and others have invested in this effort. The draft WIP includes an informative discussion of a wide range of implementation options, an excellent discussion of accounting for growth, and a thoughtful and well presented section on verification and tracking. The commitment to put measures in place to achieve 70% of the required load reductions by 2017 and all measures in place to meet target allocations by 2020 is also commendable. With the following comments, we are assisting Maryland with the completion of a final Phase I WIP and a Phase II WIP that clearly articulate plans to meet those objectives and expectations outlined in our November 4, 2009 letter.

Maryland's WIP met the statewide nitrogen, phosphorous and sediment allocations announced July 1, 2010 and August 13, 2010. While the WIP did not achieve the allocations within each of the five Maryland basins, we understand that Maryland has submitted a revised set of allocations that are designed to meet the July 1 and August 13 allocations in each basin. Although we could not incorporate the revised numbers into the draft TMDL that was released for public review, these numbers can be incorporated into the final WIP and TMDL upon verification. Maryland is leading by example to quickly address these minor issues. Therefore, because EPA determined that most of the draft WIP was fundamentally sound and appropriate, EPA is establishing allocations that reflect that draft WIP along with some minor backstop adjustments to the load allocations so that the July 1 and August 13 nutrient and sediment allocations for each basin are met. EPA made those minor backstop allocation adjustments to ensure that each basin hits the nutrient and sediment allocations in order to ensure that water quality standards can be achieved and maintained in all tidal segments of the Bay and its tributaries. These minor adjustments will not result in any changes to the point source allocations that Maryland provided with the draft WIP, and therefore would not affect corresponding NPDES permit conditions. Further, if

Maryland either a) uses the same suballocation methods to meet the nutrient and sediment targets in each basin, or b) demonstrates that it can still meet water quality standards in all tidal segments even if some basins exceed their nutrient or sediment allocations, EPA will remove this minor backstop adjustment.

Despite the many strengths of Maryland's draft WIP, the EPA WIP Evaluation Team did identify some concerns which it expects that Maryland will be able to fully address in the final Phase I WIP. The primary concern had to deal with the lack of detail on gap-filling strategies to increase implementation rates and therefore decrease loads from the agricultural sector. We recognize that Maryland will provide additional information on enforceable or otherwise binding commitments and resources to achieve these reductions from agriculture and other sectors based on public comments, and we look forward to reviewing those details. These and other issues are addressed in greater detail below, along with our recommendations for improvements that will help to provide the necessary assurance that load reduction targets will be met on schedule. EPA will discuss in more detail these concerns and opportunities for improvement during follow-up meetings with Maryland staff.

Section II: Addressing Sector Area Concerns & Opportunities for Improvement

Agriculture: Some Minor Deficiencies in Gap-Filling Strategies

The draft WIP includes an excellent presentation of a comprehensive suite of agricultural best management practices (BMP), strategies for implementation, funding sources and associated potential load reductions for each BMP.

We appreciate that the draft includes a strategy to revisit the P index based on the best available science, that it recognizes the need for alternative uses of manure, and, to that end, includes a strategy to implement a specific manure use pilot biochar project. Also noteworthy is Maryland Department of Agriculture's commitment to create a full-time staff position to work with CAFO/MAFO operations, focused on poultry operations on lower Eastern Shore.

EPA will work with Maryland to resolve questions regarding agricultural BMP efficiencies and model outputs.

The final WIP should indicate a commitment of specific implementation plans from among the strategy options that are listed for the agriculture sector, as well as specific contingency plans for implementation should the former be delayed or prove to be infeasible. The draft WIP appears to indicate that implementation to achieve nonpoint nutrient and sediment load reductions in the agriculture sector largely will occur after 2017. The schedule for agricultural BMP implementation should be clarified.

A funding gap analysis, gap-closing strategy and schedule is lacking in the agriculture sector. For example, Maryland currently estimates a deficit of about 97 FTEs for Soil Conservation District (SCD) staff necessary to meet the agricultural management goals of the Bay Watershed Implementation Plan. Where such a gap is identified, the final WIP should explain how the gap

will be closed. Without a clear strategy, commitment and schedule to address this, the feasibility of strategies that necessitate significant increases in farmer engagement is questioned.

EPA wants to ensure that Maryland's efforts to revisit the P Index will address how to have more balanced P management so that manure is not over-applied and P-saturated soils do not become a load source. EPA recognizes that making state-wide substantive changes to the P Index may take several years in consideration of the discussions occurring between USDA agencies. Being mindful of the traditional national technical standards process EPA encourages Maryland to commit to implementing a fast track phosphorus reduction program for counties that presently exhibit elevated soil phosphorus concentrations in order to reduce any additional phosphorus loads entering Bay waters.

As stated in the EPA December 29, 2009 letter, the jurisdictions are responsible for ensuring that pollution controls are properly installed and maintained and including in their annual reporting the specific mechanisms to verify that information. This will be essential in order to receive full credit in the model for nutrient and sediment reductions. EPA requests more specifics on mechanisms Maryland will use to verify nutrient reductions from nutrient management plans, given that the Nutrient Management Annual Implementation Reports provided by producers do not give a full accounting of the rate, timing, form and method of nutrient application.

No new policies/regulatory/legislative changes are proposed and no detailed contingencies are identified. EPA expects to see enforceable or otherwise binding commitments to achieve reductions from agriculture sector. The final WIP should include commitments to develop new policies (e.g., legislative and/or regulatory changes) as needed to strengthen implementation requirements for agricultural practices. Maryland could consider, for example:

- Revising nutrient management plan regulations to include specific non-point source agricultural implementation measures that were included in the WIP input deck and/or recommended in the Executive Order 13508 Section 502 guidance,
- Requiring the use of cover crops; and
- Greater engagement with poultry integrators to find solutions to manure management, with an emphasis on alternative uses of manure

Poultry and dairy manure incorporation technologies are included for 2,500 acres as a two-year milestone. In support of efforts to reach final target nutrient and sediment loads, Maryland should consider maximizing the number of acres to which this practice is applied.

The draft WIP does a nice job estimating the number of CAFO and MAFO operations that MDE staff will conduct annually. EPA expects the final WIP to provide a strategy for ensuring sufficient staff and resources to conduct these inspections as well as keep pace with the permit load.

Urban Stormwater: Some Minor Deficiencies in Gap-Filling Strategies

The draft WIP provides a relatively comprehensive treatment of the sector, including options to extend regulatory reach outside existing scope, and discussion of limiting lawn fertilizer. We commend Maryland for committing to include stormwater retrofit requirements in MS4 permits.

Given the critical role that stormwater retrofits play in reducing nutrient and sediment loads from existing sources, EPA urges Maryland to more specifically describe its urban stormwater retrofit program with clear performance standards for implementation. Also, the final WIP should include descriptions of the policy and financing mechanisms for implementing stormwater retrofit programs and explain how Maryland will track retrofit implementation.

Retrofit performance standards should include stable hydrology in receiving streams, which would reduce nutrients and sediment delivered to the Bay. We are concerned that much of the stormwater retrofitting to date has not been highly functional. Specifically, stormwater section 2.2.2.4 (pages 2-8 – 2-14) identifies alternative goals to "restore" existing developed lands with stormwater retrofits (p 2-12 and 5-23), but the performance objective for "restore" is not made clear. What does "restored" mean in terms of environmental condition? How will the operational definition of "restored" be used to define retrofit requirements, and how will retrofit outcomes be assessed? EPA believes that urban land nutrient load reductions greater than 25% could be achieved through implementation of a strong performance standard and effective nutrient and sediment controls implemented through MS4 NPDES permits.

Strategies for urban stormwater management (5.2.2) include action by a "Blue Ribbon Commission on Transportation Funding" (page 5-24) and a wide range of funding options to address watershed restoration in smaller jurisdictions (page 5-25) but there is no schedule for any of the potential actions identified. The final WIP should include descriptions of the policy and financing mechanisms for implementing stormwater retrofit programs and a schedule for their implementation.

EPA is concerned that the new and redevelopment standards may not be sufficiently enforceable through a NPDES permit or other state and local regulatory requirements. The final WIP should include a plan to generate and provide data on how often exceptions are made to performance requirements and the consequences of such exceptions in order to support a better understanding of the outcomes from program implementation.

In order to prevent increases in loads from new development outside of MS4-regulated areas, the final WIP should discuss commitment and mechanisms (e.g., state rules, construction general permit, new MS4 permits ,residual designation authority (RDA)) to regulate additional urban stormwater discharges. The final WIP should include criteria for applying RDA. Who would exercise this authority? How? Under what circumstances would it be applied?

If Maryland proposes to expand the reach of the stormwater regulatory program, the final WIP should clarify plans to assure compliance, including the provision of adequate staffing to fulfill the likely inspection and enforcement needs of an expanded program.

Based on our understanding of the draft WIP, it proposes moderate reductions in the urban stormwater sector through 2017. More aggressive stormwater retrofit implementation before 2017 could achieve significantly greater reductions as well as significant ancillary benefits in terms of riverine ecosystem restoration, restoring uses, etc.

The draft WIP includes insufficient information on Phase II MS4s and non-MS4 jurisdictions to support a judgment on whether these areas have the capacity to achieve load reductions or if additional policies and programs are necessary. We will be looking for clarification in the Phase II WIP.

The final WIP should include more detail on plans proposed on page 5-25 to develop and implement turfgrass fertilizer restrictions.

Wastewater

EPA commends Maryland for setting and maintaining the most aggressive, statewide nutrient limits for significant treatment plants in the watershed. We further note that the draft WIP indicates required Enhanced Nutrient Removal (ENR) upgrades to all 67 significant WWTPs (non-industrial) prior to allowing for any trading to meet load limitations. "In Maryland, upgrade of major WWTPs is required and the Bay Restoration Fund (BRF) was instituted to fully fund these upgrades. Trading is not available as a substitute for the upgrades."

The identification of point sources in a Final Target Load spreadsheet should help to identify individual loads that could be assigned to NPDES point sources for wastewater treatment plants (WWTP) (municipal & industrial) when permits are up for renewal.

The draft WIP recognizes a projected Bay Restoration Fund deficit, beginning in 2012, in fee collections to support upgrades to major WWTPs and on-site septic systems; however the funding gap is not quantified and the strategy to fill the funding gap is only a statement that the Bay Restoration Fund Advisory Committee "has begun developing options to close the deficit." EPA recognizes that once these limits are in a permit, they will need to occur within the compliance schedule. However, EPA expects that the final WIP would define the anticipated funding gap more clearly and identify proposed schedules and milestones for addressing it.

The final WIP should clarify whether there are staffing shortfalls for WWTP and septic upgrade work, stormwater program implementation and CSO/SSO consent order enforcement. The number of MDE staff working on these areas is stated, but there are no statements as to whether that capacity is adequate. If there are insufficient staff resources to implement the programs identified, the final WIP should include strategies, schedules and milestones to close the gaps.

Growth

The draft WIP includes an excellent discussion of accounting for growth. The draft WIP includes a general, 3-year schedule for developing offset policies, a thoughtful discussion of the interplay between WWTPs and on-site septic systems, and a strategy to track growth. Milestones to complete the growth tracking strategy are included as well as plans for calibration and tracking of new growth load estimates linked to 2-year milestone evaluations.

The draft WIP indicates no expected growth in the agriculture sector. While agriculture acres may not be increasing, we believe that the intensity and concentration of animal agriculture has the clear potential to increase, particularly with the growth of existing poultry operations and

new operations. These assumptions are based upon USDA Agriculture Census data and contracts for the development of new or expanding poultry houses. The final WIP should address the nutrient and sediment load management measures for the possible increased concentration of animal agriculture, or explain why this is not expected to be an issue in Maryland.

Any growth that Maryland expects to occur (i.e., new or increased discharges not accounted for in the TMDL allocations) prior to the finalization of an offset program in 3 years will still need to be addressed through effective and enforceable offsets. The Plan needs to address how this interim phase of activity will be effectively managed to ensure the Bay TMDL load caps are maintained.

Section III: Backstop Allocations

Maryland's WIP met the statewide nitrogen, phosphorous and sediment allocations announced July 1, 2010 and August 13, 2010. While the WIP did not achieve the allocations within each of the five Maryland basins, we understand that Maryland has submitted a revised set of allocations that are designed to meet the July 1 and August 13 allocations in each basin. Although we could not incorporate the revised numbers into the draft TMDL that was released for public review, these numbers can be incorporated into the final WIP and TMDL upon verification. Maryland is leading by example to quickly address these minor issues. Since EPA determined that most of the draft WIP was fundamentally sound and met expectations, EPA is establishing the allocations that reflects that draft WIP along with some minor backstop adjustments to the load allocations so that they meet the July 1 and August 13 nutrient and sediment allocations for each basin. EPA made those minor backstop allocation adjustments to ensure that each basin hits the nutrient and sediment allocations in order to ensure that water quality standards can be achieved and maintained in all tidal segments of the Bay and its tributaries. These minor adjustments will not result in any changes to the point source allocations that Maryland provided with the draft WIP, and therefore would not affect corresponding NPDES permit conditions. Further, if Maryland either a) uses the same suballocation methods to meet the nutrient and sediment targets in each basin, or b) demonstrates that Maryland can still meet water quality standards in all tidal segments even if some basins exceed their nutrient or sediment allocations, EPA will remove this minor backstop adjustment.

We applaud Maryland's stated commitment to have practices in place by 2017 to achieve at least 70% of the necessary nutrient and sediment reductions. According to the 2017 WIP input deck submitted on September 1, EPA has thus far verified that Maryland would achieve 67% of the necessary nitrogen reductions; 57% of the necessary phosphorus reductions; and 87% of the necessary sediment reductions with the practices identified. In evaluating all watershed jurisdiction WIPs, EPA used a consistent benchmark of 60% by 2017 for nutrients when determining whether there were gaps in the strategies that EPA needed to adjust or backstop. Maryland clearly met that requirement for nitrogen and we understand that and there are additional practices from Maryland's WIP still under evaluation. Specifically, EPA is aware that Maryland agencies have identified some additional practices and technologies to include in this 2017 scenario. EPA also recognizes that Maryland has questions about how Scenario Builder

simulates grass and forest buffer BMPs. EPA is committed to work with Maryland to analyze and run a revised scenario within the next two weeks to determine whether the additional BMPs and any adjustments to the grass and forest buffer simulation in the Scenario Builder tool would enable Maryland to hit its more ambitious target. We understand that Maryland staff have conducted additional analyses on these BMPs and believes that practices will be in place by 2017 that will achieve at least 70% of the necessary nitrogen, phosphorus and sediment reductions. We look forward to working with Maryland staff to analyze these results through the Chesapeake Bay Program Scenario Builder and Watershed Model to confirm this analysis and incorporate the findings into Maryland's final Phase I WIP.

Section IV: Other Federal Backstop Actions

Pursuant to the December 29, 2009 letter from Regional Administrator Shawn Garvin to the Chesapeake Bay Principals' Staff Committee, EPA may consider applying other federal backstop actions in addition to those listed in Section III to ensure that jurisdictions develop and implement sufficient final WIPs and achieve nutrient and sediment load reductions as evidenced through two-year milestones.

Section V: Other Suggested Improvements/Final Comments

In its June 11, 2010 letter to the Principals Staff Committee, EPA indicated that it would include for each jurisdiction a separate Temporary Reserve for both nitrogen and phosphorus for the purposes of WIP development and incorporating contingency actions. The Temporary Reserve is based on possible changes to nitrogen and phosphorus allocations that could result from two forthcoming model refinements to Phase 5.3 of the Chesapeake Bay Program Watershed Model.

In his July 1 letter to the Principals Staff Committee communicating the major basin and jurisdiction nutrient allocations, EPA Regional Administrator Shawn Garvin announced that this reserve would be 5%. The Regional Administrator explained in that letter that the Agency expects jurisdictions to account for this 5% Temporary Reserve as an element of their contingency actions in their Phase I WIPs, in the event that the 2011 refinements to the Phase 3.5 Chesapeake Bay Watershed Model result in draft allocations lower than those provided to you on July 1, 2010. EPA will work with Maryland to incorporate this 5% Temporary Reserve into the final Phase I WIPs. Depending on the results of the 2011 model refinements, the Temporary Reserve will be revised or removed as appropriate during the 2011 Phase II WIP development process.

EPA also expects the final WIP to identify the load reductions that Maryland will achieve in each of its major basins every two years, starting in 2011. As stated in EPA's November 4, 2009 letter to the Chesapeake Bay Program Principals' Staff Committee and the April 2, 2010 *Guide for EPA's Evaluation of Phase I Watershed Implementation Plans*, this schedule is necessary for EPA to assess whether 2-year milestones are on pace to achieve the 2017 and 2025 goals. If this information is not provided, EPA will assume constant, linear nutrient and sediment reductions

between 2009, 2017 and 2025, and will assess two-year milestone commitments and progress accordingly.

EPA appreciated the table of proposed actions that appeared in the Executive Summary. It clearly communicated to the public and to us the measures that Maryland is considering.

EPA looks forward to discussing these issues and providing additional suggestions to Maryland at the upcoming one-on-one meeting with EPA.

Section VI: Closing

We congratulate the Maryland WIP Action Team as Maryland submitted a most substantive draft WIP on September 1. We recognize and greatly appreciate the tremendous effort that the Maryland Governor's Office, and the Departments of the Environment, Natural Resources, Agriculture, Planning and others have invested in this effort.

In summary, the backstop allocation adjustments that EPA has proposed in the draft TMDL in Maryland are minor. We look forward to working with Maryland over the next two months to remove or reduce those adjustments based upon a well supported final WIP addressing the comments above. We look forward to continued work with MD to communicate the draft Chesapeake Bay TMDL and draft WIP to the public; to improve Maryland's WIP document and input deck; and continue to set a clear example for this new era of accountability for results in the Bay restoration efforts. To that end, we have requested the opportunity to meet with Maryland colleagues during the week of October 4th to further explain this feedback and to discuss ideas for strengthening the final Phase I WIP, due 11/29/2010, and the Phase II WIP that will be submitted in 2011.